1983
ASPHALT
REPORT

1983 BITUMINOUS MATERIALS DATA ANALYSIS

MATERIALS BUREAU

FEBRUARY, 1984

1983 ASPHALT MATERIALS DATA ANALYSIS

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* PLEASE NOTE THE DISTINCTION BETWEEN "SAMPLE" AND "RECORD".
A SAMPLE MAY BE TESTED AND THEN RETESTED (CHECKTEST) THUS CREATING TWO RECORDS.

NYSDOT
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50 Wolf Road, POD 34
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A. ADMINISTRATIVE DATA

1983 ASPHALT MATERIALS ANALYSIS

1983 ASPHALT MATERIALS DATA
TOTAL RECORDS BY GRADE,RESULTS,ACTION
TEST TYPE=ALL,REQUEST AGENCY=ALL

		RESULT							ACTION		
GRADE	ITEM NO.	PASS (1)	S C (2)	INVALID SAMPLE (3)	FAIL (4)	SUM VALID (1+2+4)	ERROR (≠1,2, 3 or 4)	TOTAL (1+2+3+4 +ERROR)	ACCEPT	REJECT	NO ACTION
AC-5	702-0200	28	4	0	3	35	0	35	30	0	5
AC-15	702-0400	185	10	0	2	197	0	197	190	2	5
AC-20	702-0500	1288	68	3	10	1366	0	1369	1271	6	92
85-100	702-0600	54	0	0	0	54	0	54	41	0	13
RS-1	702-3001	16	5	2	6	27	0	29	21	2	6
RS-2	702-3101	55	2	3	0	57	0	60	57	0	3
MS-2	702-3201	178	0	0	4	182	0	182	175	0	7
HFMS-2	702-3301	48	2	0	13	63	0	63	50	13	0
HFMS-2H	702-3401	1	0	6	1	2	0	8	1	0	7
HFRS-2	702-80	14	9	0	18	41	0	41	23	14	4
CRS-2	702-4101	43	2	7	0	45	0	52	45	0	7
CSS-1H	702-4501	0	0	0	4	4	0	4	0	2	2
CSS-1H	702-90**	99	10	2	14	123	0	125	117	4	4
HFMS-2H	702-90**	159	16	35	21	196	0	231	184	4	43
SS-1H	702-90**	32	2	0	0	34	0	34	33	0	1
FLUX		8	12	0	7	27	0	27	22	0	5
TOTALS		2208	142	58	103	2453	0	2511	2260	47	204

**TACK COAT

1983 ASPHALT MATERIALS DATA
TOTAL RECORDS BY GRADE,RESULTS,ACTION
TEST TYPE=NORMAL;REQUEST AGENCY=DOT NORMAL,MAINTENANCE,RECORD SAMPLE

		RESULT							ACTION		
GRADE	ITEM NO.	PASS (1)	S C (2)	INVALID SAMPLE (3)	FAIL (4)	SUM VALID (1+2+4)	ERROR (≠1,2, 3 or 4)	TOTAL (1+2+3+4 +ERROR)	ACCEPT	REJECT	NO ACTION
AC-5	702-0200	12	0	0	0	12	0	12	9	0	3
AC-15	702-0400	169	5	0	1	175	0	175	169	1	5
AC-20	702-0500	1277	34	2	5	1316	0	1318	1233	3	82
85-100	702-0600	54	0	0	0	54	0	54	41	0	13
RS-1	702-3001	15	3	2	3	21	0	23	18	1	4
RS-2	702-3101	55	1	3	0	56	0	59	56	0	3
MS-2	702-3201	156	0	0	2	158	0	158	154	0	4
HFMS-2	702-3301	44	1	0	5	50	0	50	45	5	0
HFMS-2H	702-3401	0	0	6	0	0	0	6	0	0	6
HFRS-2	702-80	14	5	0	9	28	0	28	19	7	2
CRS-2	702-4101	43	1	7	0	44	0	51	44	0	7
CSS-1H	702-4501	0	0	0	2	2	0	2	0	1	1
CSS-1H	702-90**	99	5	1	7	111	0	112	108	2	2
HFMS-2H	702-90**	153	8	35	10	171	0	206	164	1	41
SS-1H	702-90**	32	1	0	0	33	0	33	32	0	1
FLUX		5	7	0	3	15	0	15	15	0	0
TOTALS		2128	71	56	47	2246	0	2302	2107	21	174

**TACK COAT

SAMPLES BY REQUESTING AGENCY

ALL TEST TYPES EXCEPT RETESTS

AGENCY	SUBTOTAL
DOT NORMAL	2049
DOTMAINT	182
RECSAMPLE	109
DOTENGR	17
GRAND TOTALS	2357

SAMPLES BY REQUESTING AGENCY

TEST TYPE NORMAL ONLY

AGENCY	SUBTOTAL
DOT NORMAL	2017
DOTMAINT	177
RECSAMPLE	108
DOTENGR	0
GRAND TOTALS	2302

1983 ASPHALT MATERIALS DATA
TOTAL SAMPLES BY PRIMESOURCE,GRADE

GRADE : / MATL. DESIGNATION (702-) :	AC-5 -0200	AC-15 -0400	AC-20 -0500	85-100 -0600	RS-1 -3001	RS-2 -3101	MS-2 -3201	HFMS-2 -3301	HFMS-2H -3401
PRIMESOURCE									
ALBANY ASP ALBANY	0	0	0	0	6	42	34	11	0
ALLEGHANY BIT BELMONT	0	0	0	0	0	0	14	0	0
ARCO PHILADELPHIA	0	0	12	0	0	0	0	0	0
ARCO THREE RIVERS	0	0	188	0	0	0	0	0	0
ASPHALT SERV JAMESTOWN	0	0	0	0	0	0	0	0	0
ASPHALT-ASSOC KEARNY	0	0	10	0	0	0	0	0	0
B.P. PETRO-CAN MONTREAL	0	0	0	7	0	0	0	0	0
B.P. PETRO-CAN OAKVILLE	27	43	0	0	0	0	0	0	0
BAKELITE QUEBEC	0	0	0	0	2	0	2	13	0
BIMASCO HAUPPAUGE	0	0	0	0	0	0	0	0	0
CENTRAL ASPH WATKINS GLEN	0	0	0	0	0	0	24	0	2
CHEVRON LYONS	0	0	106	0	0	1	0	7	0
CHEVRON MONTREAL CAN	0	0	0	0	0	0	19	0	0
CHEVRON TROY	0	0	68	0	0	0	26	0	0
CHEVRON PERTH AMBOY	0	0	99	0	0	0	0	0	0
CIBRO ALBANY	0	0	250	0	0	0	0	0	0
CIBRO THREE RIVERS	0	0	83	0	0	0	0	0	0
COLPROVIA NEW WINDSOR	0	0	0	0	0	0	0	0	0
CORTLAND CORTLAND	0	0	0	0	9	1	1	6	3
EXXON LINDEN	0	0	85	0	0	0	0	0	0
GULF CANADA MONTREAL	0	0	0	14	0	0	0	0	0
KRANTZ BUFFALO	0	0	0	0	0	0	0	0	0
MARATHON TONAWANDA	3	118	29	0	0	0	0	0	0
MIDLAND TONAWANDA	0	0	0	0	0	15	37	8	1
MOHAWK SCOTIA	0	0	0	0	0	0	0	0	0
MONACO PITTSFORD	0	0	12	0	0	0	0	0	0
NYS EMULSION BUFFALO	0	0	0	0	0	0	0	8	0
NYS EMULSION UTICA	0	0	0	0	6	0	0	0	0
NYS EMULSION WATERTOWN	0	0	0	0	0	0	0	0	0
OSWEGO CENTRAL SQUARE	0	0	0	0	0	0	1	0	0
PARCO STAMFORD	0	0	164	0	0	0	0	0	0
PECKHAM - PARCO ATHENS	0	0	146	0	0	0	0	0	0
PETROFINA CAN MONTREAL	0	4	0	33	0	0	0	0	0
SHELL CANADA MONTREAL	0	0	14	0	0	0	0	0	0
UNITED REF WARREN	0	26	0	0	0	0	0	0	0
WEST BANK PENNSAUKEN	0	0	1	0	0	0	0	0	0
WEST BANK PERTH AMBOY	0	0	62	0	0	0	0	0	0
TOTALS	30	191	1329	54	23	59	158	53	6

1983 ASPHALT MATERIALS DATA
TOTAL SAMPLES BY PRIMESOURCE,GRADE

GRADE : / MATL. DESIGNATION (702-) :	HFRS-2 -80	SS-1 -3501	SS-1H -3601	CRS-1 -4001	CRS-2 -4101	CMS-2 -4201	CMS-2H -4301	CSS-1 -4401	CSS-1H -4501
PRIMESOURCE									
ALBANY ASP ALBANY	4	0	0	0	0	0	0	0	0
ALLEGHANY BIT BELMONT	0	0	0	0	0	0	0	0	0
ARCO PHILADELPHIA	0	0	0	0	0	0	0	0	0
ARCO THREE RIVERS	0	0	0	0	0	0	0	0	0
ASPHALT SERV JAMESTOWN	0	0	0	0	5	0	0	0	0
ASPHALT-ASSOC KEARNY	0	0	0	0	0	0	0	0	0
B.P. PETRO-CAN MONTREAL	0	0	0	0	0	0	0	0	0
B.P. PETRO-CAN OAKVILLE	0	0	0	0	0	0	0	0	0
BAKELITE QUEBEC	0	0	0	0	0	0	0	0	0
BIMASCO HAUPPAUGE	0	0	0	0	0	0	0	0	0
CENTRAL ASPH WATKINS GLEN	0	0	0	0	1	0	0	0	0
CHEVRON LYONS	9	0	0	0	12	0	0	0	2
CHEVRON MONTREAL CAN	0	0	0	0	0	0	0	0	0
CHEVRON TROY	0	0	0	0	0	0	0	0	0
CHEVRON PERTH AMBOY	0	0	0	0	0	0	0	0	0
CIBRO ALBANY	0	0	0	0	0	0	0	0	0
CIBRO THREE RIVERS	0	0	0	0	0	0	0	0	0
COLPROVIA NEW WINDSOR	0	0	0	0	0	0	0	0	0
CORTLAND CORTLAND	0	0	0	0	0	0	0	0	0
EXXON LINDEN	0	0	0	0	0	0	0	0	0
GULF CANADA MONTREAL	0	0	0	0	0	0	0	0	0
KRANTZ BUFFALO	0	0	0	0	17	0	0	0	0
MARATHON TONAWANDA	0	0	0	0	0	0	0	0	0
MIDLAND TONAWANDA	3	0	0	0	16	0	0	0	0
MOHAWK SCOTIA	0	0	0	0	0	0	0	0	0
MONACO PITTSFORD	0	0	0	0	0	0	0	0	0
NYS EMULSION BUFFALO	12	0	0	0	0	0	0	0	0
NYS EMULSION UTICA	0	0	0	0	0	0	0	0	0
NYS EMULSION WATERTOWN	0	0	0	0	0	0	0	0	0
OSWEGO CENTRAL SQUARE	0	0	0	0	0	0	0	0	0
PARCO STAMFORD	0	0	0	0	0	0	0	0	0
PECKHAM - PARCO ATHENS	0	0	0	0	0	0	0	0	0
PETROFINA CAN MONTREAL	0	0	0	0	0	0	0	0	0
SHELL CANADA MONTREAL	0	0	0	0	0	0	0	0	0
UNITED REF WARREN	0	0	0	0	0	0	0	0	0
WEST BANK PENNSAUKEN	0	0	0	0	0	0	0	0	0
WEST BANK PERTH AMBOY	0	0	0	0	0	0	0	0	0
TOTALS	28	0	0	0	51	0	0	0	2

1983 ASPHALT MATERIALS DATA
TOTAL SAMPLES BY PRIMESOURCE,GRADE

GRADE : / MATL. DESIGNATION (702-) :	MC-250 -22	CRS-1H** -90	CSS-1H** -90	HFMS-2H** -90	SS-1H** -90	FLUX	ERROR (BLANK,0)	TOTAL
PRIMESOURCE								
ALBANY ASP ALBANY	0	0	0	78	0	0	0	175
ALLEGHANY BIT BELMONT	0	0	1	0	0	0	0	15
ARCO PHILADELPHIA	0	0	0	0	0	0	0	12
ARCO THREE RIVERS	0	0	0	0	0	0	0	188
ASPHALT SERV JAMESTOWN	0	0	0	0	0	0	0	5
ASPHALT-ASSOC KEARNY	0	0	0	0	0	0	0	10
B.P. PETRO-CAN MONTREAL	0	0	0	0	0	0	0	7
B.P. PETRO-CAN OAKVILLE	0	0	0	0	0	0	0	70
BAKELITE QUEBEC	0	0	0	0	7	0	0	24
BIMASCO HAUPPAUGE	0	0	2	3	0	0	0	5
CENTRAL ASPH WATKINS GLEN	0	0	0	12	0	0	0	39
CHEVRON LYONS	0	0	37	0	26	13	0	213
CHEVRON MONTREAL CAN	0	0	0	0	0	0	0	19
CHEVRON TROY	0	0	0	0	0	0	0	94
CHEVRON PERTH AMBOY	0	0	0	0	0	0	0	99
CIBRO ALBANY	0	0	0	0	0	0	0	250
CIBRO THREE RIVERS	0	0	0	0	0	3	0	86
COLPROVIA NEW WINDSOR	0	0	0	5	0	0	0	5
CORTLAND CORTLAND	0	0	0	36	0	0	0	56
EXXON LINDEN	0	0	0	0	0	0	0	85
GULF CANADA MONTREAL	0	0	0	0	0	0	0	14
KRANTZ BUFFALO	0	0	0	0	0	0	0	17
MARATHON TONAWANDA	0	0	0	0	0	4	0	154
MIDLAND TONAWANDA	0	0	0	48	0	0	0	128
MOHAWK SCOTIA	0	0	19	0	0	0	0	19
MONACO PITTSFORD	0	0	0	0	0	0	0	12
NYS EMULSION BUFFALO	0	0	0	22	0	0	0	42
NYS EMULSION UTICA	0	0	0	1	0	0	0	7
NYS EMULSION WATERTOWN	0	0	0	3	0	0	0	3
OSWEGO CENTRAL SQUARE	0	0	53	0	0	0	0	54
PARCO STAMFORD	0	0	0	0	0	0	0	164
PECKHAM - PARCO ATHENS	0	0	0	0	0	0	0	146
PETROFINA CAN MONTREAL	0	0	0	0	0	0	0	37
SHELL CANADA MONTREAL	0	0	0	0	0	0	0	14
UNITED REF WARREN	0	0	0	0	0	0	0	26
WEST BANK PENNSAUKEN	0	0	0	0	0	0	0	1
WEST BANK PERTH AMBOY	0	0	0	0	0	0	0	62
TOTALS	0	0	112	208	33	20	0	2357

**TACK COAT

1983 ASPHALT MATERIALS DATA
TOTAL CEMENT DATA RECORDS BY CODING PARAMETERS

	TEST TYPE	REQ AGENCY	TOTAL
GRADE AC-5	1	1	9
	1	3	3
	2	1	5
	3	1	14
	4	4	4
SUBTOTAL			35
GRADE AC-15			
	1	1	160
	1	2	10
	1	3	5
	2	1	6
	3	1	9
	3	2	4
	4	4	3
SUBTOTAL			197
GRADE AC-20			
	1	1	1238
	1	2	1
	1	3	79
	2	1	34
	2	3	6
	3	1	7
	3	2	1
	4	3	1
	4	4	2
SUBTOTAL			1369
GRADE 85-100			
	1	1	38
	1	2	2
	1	3	14
SUBTOTAL			54
TOTAL			1655

TEST RECORD CODING PARAMETERS

REQUESTING AGENCY:

1 - DOT NORMAL
2 - DOT MAINTENANCE
3 - RECORD SAMPLING
4 - DOT ENGINEERING
5 - DOT ER&DB
6 - THRUWAY
7 - OTHER
~~0~~ - UNKNOWN/ERROR

TEST TYPE:

1 - NORMAL
2 - CHECK
3 - ADDITIONAL GROUP
4 - INFO SAMPLE
~~0~~ - UNKNOWN/ERROR

A10

Card 1 →

BR 170 Serial No. 8 – 13

Date Rec'd 14 Month / Day / Year 19

Date Sampled 20 Month / Day / Year 25

Primary Source (See list) 26 – 29

Lot Number 30 – 33

Grade 34 – 39

Materials Designation 40 7 0 2 – 44

Region 47 – 48

Mixing plant code (See list) 49 – 52

Emulsions No. in Group 53 – 54

Cont. No. 55 – 56

Card 2 → 9 (Circle Agency)

Requesting Agency: DOT Normal 1 | DOT Maintenance 2 | Record Sampling 3 | DOT Engineering 4 | DOT Engr. Research 5 | Thruway 6 | Other 7 →

Crude Source 10: Normal 1 | Canadian Mid Continent 2 | Boscan 3 | Other 4 →

11 (Circle Result) Results: Specifications met 1 | Substantial Conformance 2 | Invalid Sample 3 | Below Acceptable Standards 4

By

Test Number 12 L B – 21

Test Date 22 Month / Day / Year 27

28 (Circle Type) Test Type: Normal 1 | Check 2 | Add'l Gp 3 | Info Sample 4

Refer to 29 L B – 38

Tested by

Line No 39 – 43

Checked by

ITEM	ANALYSIS	1 Sat. 2 Unsat.
Particle Charge 8 m A. (+,)	44	45
Specific Gravity @ 60F	46 – 50	51
Specific Gravity @ 77F	52 – 56	57
Homogeneity		58
Water %	59 – 61	62
Solubility % in	63 – 66	67
Flash Point (°F)	68 – 70	71
Softening Pt. R&B (°F)	72 – 74	75

Card 3 → 1 Sat. 2 Unsat.

DISTILLATE [CUTBACKS]

Distillate to °F	% Vol.	% total	
320	8 – 11	12 – 15	16
374	17 – 20	21 – 24	25
437	26 – 29	30 – 33	34
500	35 – 38	39 – 42	43
	44 – 47	48 – 51	52
680	53 – 56	57 – 60	61
RESIDUE	62 – 65	66 – 69	70

Card 4 → 1 Sat. 2 Unsat.

ITEM	ANALYSIS	1 Sat. 2 Unsat.
THIN FILM OVEN TEST: % Difference (+,)	8 – 9 – 12	13
Penetration @ 77F 100g, 5 Sec. (.1mm)	— , — , —	
[Indicate striking can bottom with "+" in fourth box]	14 AVG 16 – 17	18
% original pen @ 77F	19 – 20	21
Ductility @ 60F 5cm/min. (cm)	22 – 24+ over	26
Kinematic Viscosity @ 275F (C. Stokes)	27 – 32	33
Absolute Viscosity 140F, 30cm. (poise)	34 – 39	40
Viscosity Ratio 60C [after TFOT / before TFOT]	41 – 42	43
STANDARD LOSS: Loss of Heating @ 325F (%)	44 – 46	47
% orig. pen. @ 77F	48 – 50	51
DISTILLATE [EMULSIONS]: Residue (%)	52 – 54	55
Petroleum Spirits (%)	56 – 58	59
Float Test @ 140F (Sec.)	60 – 63+ over	65

Card 5 → 1 Sat. 2 Unsat.

ITEM	ANALYSIS	1 Sat. 2 Unsat.
Kinematic Viscosity @ 140F (C. Stokes)	8 – 13	14
Kinematic Viscosity @ 275F (C. Stokes)	15 – 20	21
Absolute Viscosity @ 140F, 30cm, (poise)	22 – 27	28
Penetration @77F 100g, 5 Sec. (.1mm)	— , — , —	
[Indicate striking can bottom with "+" in fourth box]	29 AVG 31 – 32	33
Penetration @ 39.2F 200g, 60 Sec. (.1mm) AVG.	34 – 36	37
Pen. Ratio Pen at 39.2F / Pen at 77F	38 – 40	41
Ductility @ 60F 5 cm/min. (cm)	42 – 44+ over	46
pH	47 – 48	49
Demulsibility (n/50) % by wt.	50 – 52	53
Demulsibility (n/10) % by wt.	54 – 56	57
Stripping Test		58
Stone Coating		59
Lot Year	60 – 61	

Card 5 → (CIRCLE ACTION)

FINAL ACTION 62: ACCEPT 1 | REJECT 2 | NO ACTION 3

by

date

BR 18-1b(8/78)

B. TECHNICAL DATA

1983 ASPHALT MATERIALS ANALYSIS

1983 ASPHALT MATERIALS DATA
CEMENT DATA SUMMARY STATISTICS

GRADE	RECORDS*	N	PEN 77F MEAN	PEN 77F SD	AB VIS 140F MEAN	AB VIS 140F SD	KIN VIS 275F MEAN	KIN VIS 275F SD
AC-5	12	12	164.000	12.813	536.667	33.115		
AC-15	175	175	84.914	7.036	1384.966	117.807		
AC-20	1318	1317	77.212	9.599	1967.978	216.089		
85-100	54	54	90.037	3.608			330.278	18.727

* INCLUDES ALL REQUESTING AGENCIES, TEST-TYPE=1(NORMAL)
BEFORE DATA SCREENING FOR BLANKS,ETC.

HISTOGRAMS OF VISCOSITY

1983 ASPHALT CEMENT DATA

a. AC-5

b. AC-15

c. AC-20

d. 85-100

a. 1983 ASPHALT MATERIALS DATA GRADE AC-5

HISTOGRAM OF VARIABLE AVIS140

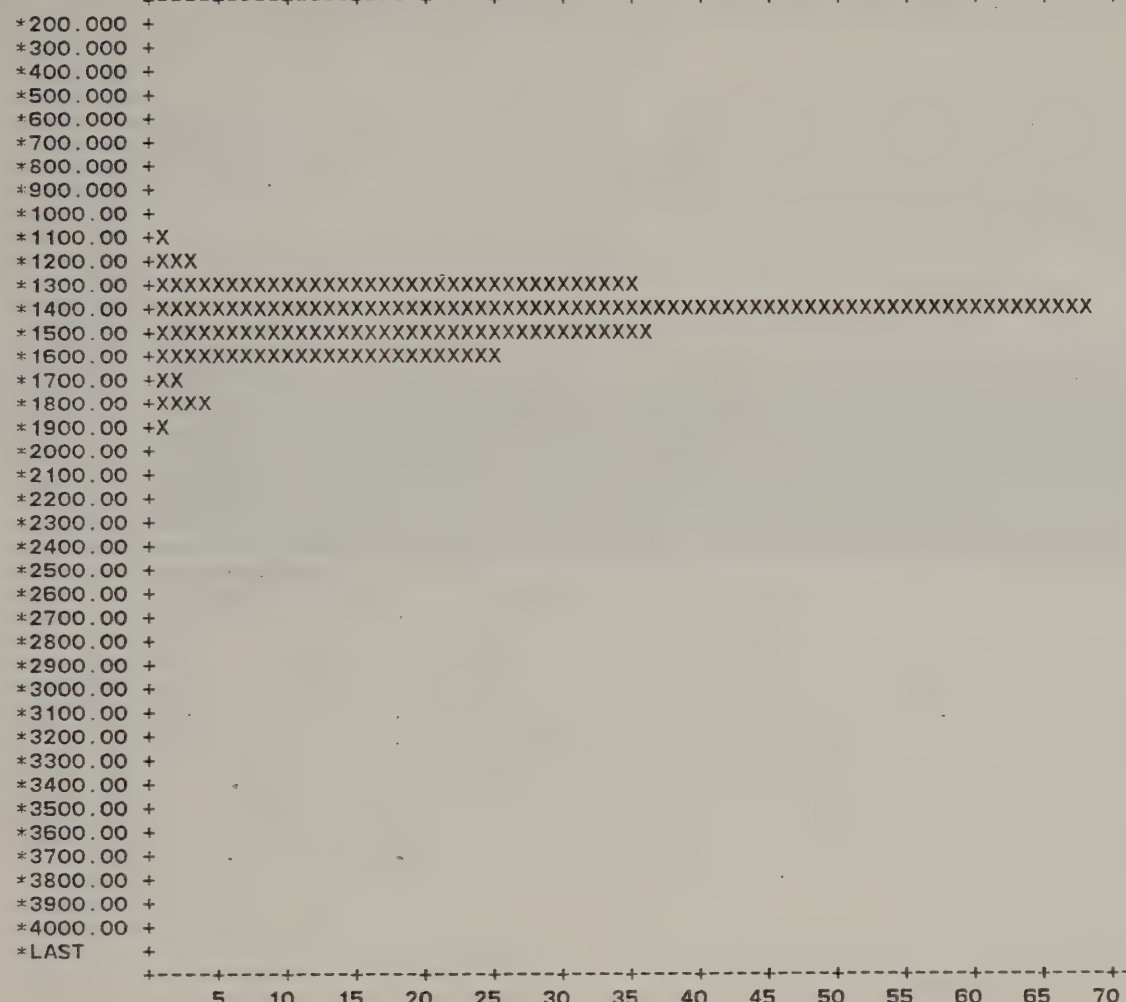
SYMBOL	COUNT	MEAN	ST.DEV.
X	12	536.667	33.115

INTERVAL NAME	FREQUENCY INT.	FREQUENCY CUM.	PERCENTAGE INT.	PERCENTAGE CUM.
*200.000	0	0	0.0	0.0
*300.000	0	0	0.0	0.0
*400.000	0	0	0.0	0.0
*500.000	1	1	8.3	8.3
*600.000	11	12	91.7	100.0
*700.000	0	12	0.0	100.0
*800.000	0	12	0.0	100.0
*900.000	0	12	0.0	100.0
*1000.00	0	12	0.0	100.0
*1100.00	0	12	0.0	100.0
*1200.00	0	12	0.0	100.0
*1300.00	0	12	0.0	100.0
*1400.00	0	12	0.0	100.0
*1500.00	0	12	0.0	100.0
*1600.00	0	12	0.0	100.0
*1700.00	0	12	0.0	100.0
*1800.00	0	12	0.0	100.0
*1900.00	0	12	0.0	100.0
*2000.00	0	12	0.0	100.0
*2100.00	0	12	0.0	100.0
*2200.00	0	12	0.0	100.0
*2300.00	0	12	0.0	100.0
*2400.00	0	12	0.0	100.0
*2500.00	0	12	0.0	100.0
*2600.00	0	12	0.0	100.0
*2700.00	0	12	0.0	100.0
*2800.00	0	12	0.0	100.0
*2900.00	0	12	0.0	100.0
*3000.00	0	12	0.0	100.0
*3100.00	0	12	0.0	100.0
*3200.00	0	12	0.0	100.0
*3300.00	0	12	0.0	100.0
*3400.00	0	12	0.0	100.0
*3500.00	0	12	0.0	100.0
*3600.00	0	12	0.0	100.0
*3700.00	0	12	0.0	100.0
*3800.00	0	12	0.0	100.0
*3900.00	0	12	0.0	100.0
*4000.00	0	12	0.0	100.0
*LAST	0	12	0.0	100.0

b. 1983 ASPHALT MATERIALS DATA GRADE AC-15

HISTOGRAM OF VARIABLE AVIS140

SYMBOL	COUNT	MEAN	ST.DEV.
X	175	1384.966	117.807

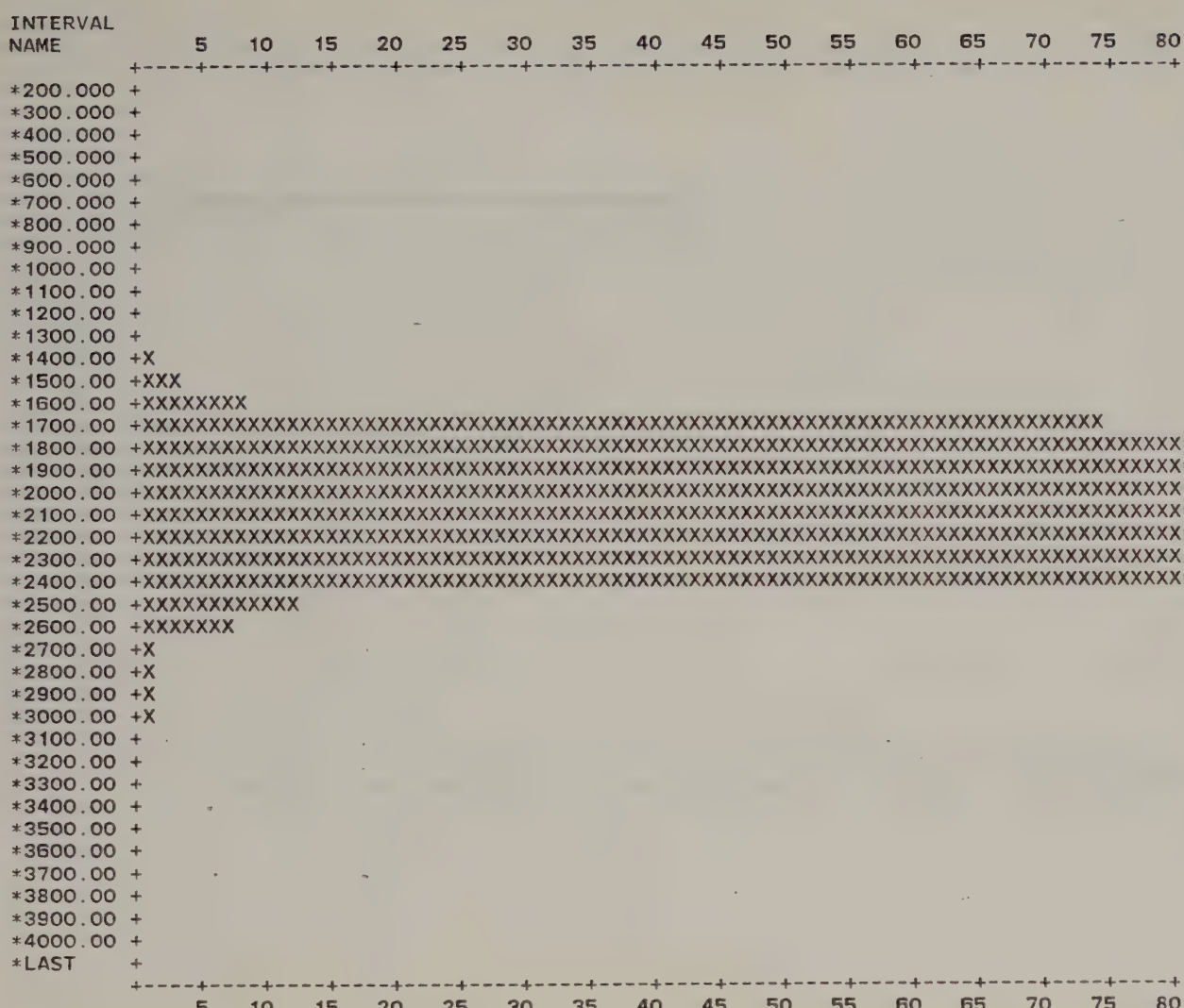


INTERVAL NAME	FREQUENCY INT.	FREQUENCY CUM.	PERCENTAGE INT.	PERCENTAGE CUM.
*200.000	0	0	0.0	0.0
*300.000	0	0	0.0	0.0
*400.000	0	0	0.0	0.0
*500.000	0	0	0.0	0.0
*600.000	0	0	0.0	0.0
*700.000	0	0	0.0	0.0
*800.000	0	0	0.0	0.0
*900.000	0	0	0.0	0.0
*1000.00	0	0	0.0	0.0
*1100.00	1	1	0.6	0.6
*1200.00	3	4	1.7	2.3
*1300.00	35	39	20.0	22.3
*1400.00	68	107	38.9	61.1
*1500.00	36	143	20.6	81.7
*1600.00	25	168	14.3	96.0
*1700.00	2	170	1.1	97.1
*1800.00	4	174	2.3	99.4
*1900.00	1	175	0.6	100.0
*2000.00	0	175	0.0	100.0
*2100.00	0	175	0.0	100.0
*2200.00	0	175	0.0	100.0
*2300.00	0	175	0.0	100.0
*2400.00	0	175	0.0	100.0
*2500.00	0	175	0.0	100.0
*2600.00	0	175	0.0	100.0
*2700.00	0	175	0.0	100.0
*2800.00	0	175	0.0	100.0
*2900.00	0	175	0.0	100.0
*3000.00	0	175	0.0	100.0
*3100.00	0	175	0.0	100.0
*3200.00	0	175	0.0	100.0
*3300.00	0	175	0.0	100.0
*3400.00	0	175	0.0	100.0
*3500.00	0	175	0.0	100.0
*3600.00	0	175	0.0	100.0
*3700.00	0	175	0.0	100.0
*3800.00	0	175	0.0	100.0
*3900.00	0	175	0.0	100.0
*4000.00	0	175	0.0	100.0
*LAST	0	175	0.0	100.0

c.1983 ASPHALT MATERIALS DATA GRADE AC-20

HISTOGRAM OF VARIABLE AVIS140

SYMBOL	COUNT	MEAN	ST.DEV.
X	1317	1967.978	216.089

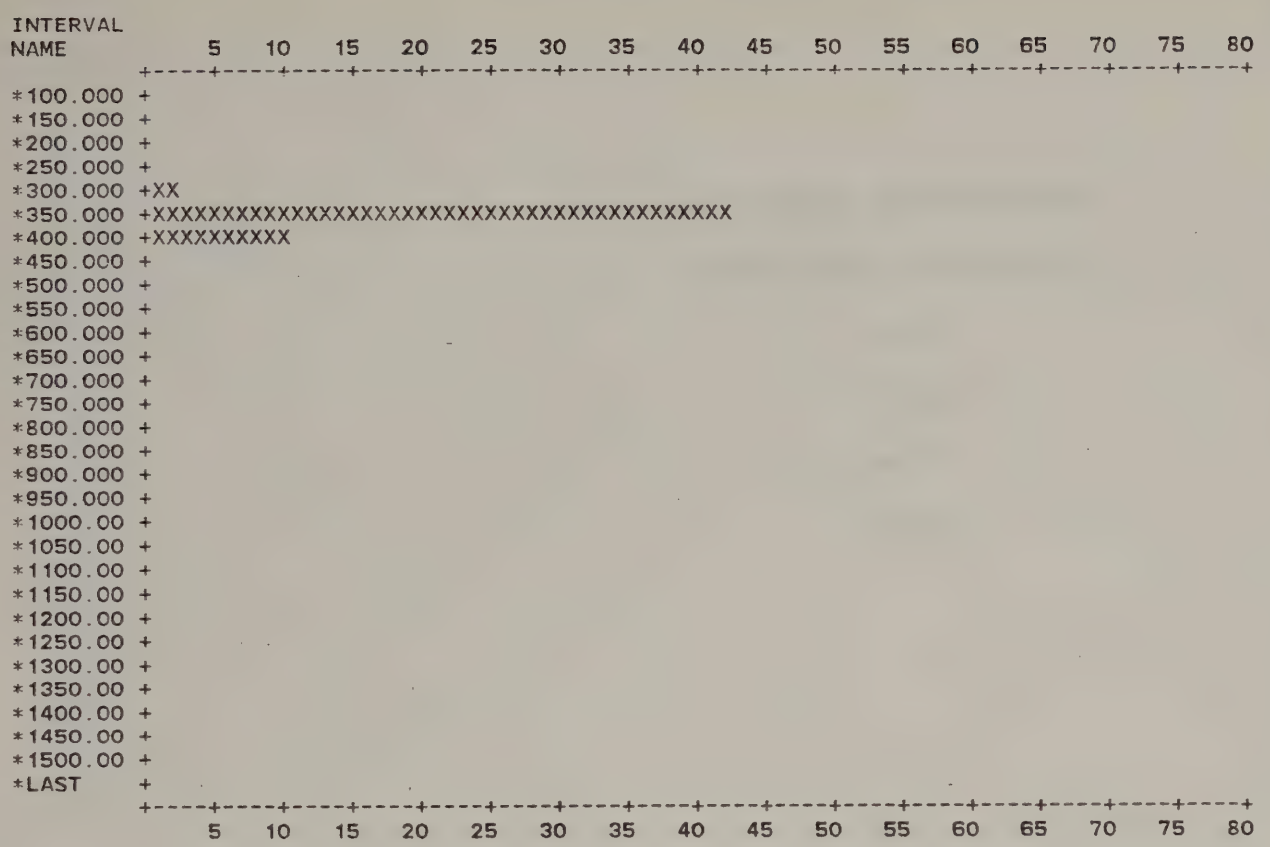


INTERVAL NAME	FREQUENCY INT.	FREQUENCY CUM.	PERCENTAGE INT.	PERCENTAGE CUM.
*200.000	0	0	0.0	0.0
*300.000	0	0	0.0	0.0
*400.000	0	0	0.0	0.0
*500.000	0	0	0.0	0.0
*600.000	0	0	0.0	0.0
*700.000	0	0	0.0	0.0
*800.000	0	0	0.0	0.0
*900.000	0	0	0.0	0.0
*1000.00	0	0	0.0	0.0
*1100.00	0	0	0.0	0.0
*1200.00	0	0	0.0	0.0
*1300.00	0	0	0.0	0.0
*1400.00	1	1	0.1	0.1
*1500.00	3	4	0.2	0.3
*1600.00	8	12	0.6	0.9
*1700.00	74	86	5.6	6.5
*1800.00	236	322	17.9	24.4
*1900.00	278	600	21.1	45.6
*2000.00	229	829	17.4	62.9
*2100.00	127	956	9.6	72.6
*2200.00	115	1071	8.7	81.3
*2300.00	135	1206	10.3	91.6
*2400.00	88	1294	6.7	98.3
*2500.00	12	1306	0.9	99.2
*2600.00	7	1313	0.5	99.7
*2700.00	1	1314	0.1	99.8
*2800.00	1	1315	0.1	99.8
*2900.00	1	1316	0.1	99.9
*3000.00	1	1317	0.1	100.0
*3100.00	0	1317	0.0	100.0
*3200.00	0	1317	0.0	100.0
*3300.00	0	1317	0.0	100.0
*3400.00	0	1317	0.0	100.0
*3500.00	0	1317	0.0	100.0
*3600.00	0	1317	0.0	100.0
*3700.00	0	1317	0.0	100.0
*3800.00	0	1317	0.0	100.0
*3900.00	0	1317	0.0	100.0
*4000.00	0	1317	0.0	100.0
*LAST	0	1317	0.0	100.0

d. 1983 ASPHALT MATERIALS DATA GRADE 85-100

HISTOGRAM OF VARIABLE KVIS275

SYMBOL	COUNT	MEAN	ST.DEV.
X	54	330.278	18.727



INTERVAL NAME	FREQUENCY INT.	FREQUENCY CUM.	PERCENTAGE INT.	PERCENTAGE CUM.
*100.000	0	0	0.0	0.0
*150.000	0	0	0.0	0.0
*200.000	0	0	0.0	0.0
*250.000	0	0	0.0	0.0
*300.000	2	2	3.7	3.7
*350.000	42	44	77.8	81.5
*400.000	10	54	18.5	100.0
*450.000	0	54	0.0	100.0
*500.000	0	54	0.0	100.0
*550.000	0	54	0.0	100.0
*600.000	0	54	0.0	100.0
*650.000	0	54	0.0	100.0
*700.000	0	54	0.0	100.0
*750.000	0	54	0.0	100.0
*800.000	0	54	0.0	100.0
*850.000	0	54	0.0	100.0
*900.000	0	54	0.0	100.0
*950.000	0	54	0.0	100.0
*1000.00	0	54	0.0	100.0
*1050.00	0	54	0.0	100.0
*1100.00	0	54	0.0	100.0
*1150.00	0	54	0.0	100.0
*1200.00	0	54	0.0	100.0
*1250.00	0	54	0.0	100.0
*1300.00	0	54	0.0	100.0
*1350.00	0	54	0.0	100.0
*1400.00	0	54	0.0	100.0
*1450.00	0	54	0.0	100.0
*1500.00	0	54	0.0	100.0
*LAST	0	54	0.0	100.0

HISTOGRAMS OF PENETRATION

1983 ASPHALT CEMENT DATA

a. AC-5

b. AC-15

c. AC-20

d. 85-100

a. 1983 ASPHALT MATERIALS DATA GRADE AC-5

HISTOGRAM OF VARIABLE PEN77

SYMBOL	COUNT	MEAN	ST.DEV.
X	12	164.000	12.813

INTERVAL NAME	5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80	FREQUENCY INT.	FREQUENCY CUM.	PERCENTAGE INT.	PERCENTAGE CUM.
*50.0000	+	0	0	0.0	0.0
*55.0000	+	0	0	0.0	0.0
*60.0000	+	0	0	0.0	0.0
*65.0000	+	0	0	0.0	0.0
*70.0000	+	0	0	0.0	0.0
*75.0000	+	0	0	0.0	0.0
*80.0000	+	0	0	0.0	0.0
*85.0000	+	0	0	0.0	0.0
*90.0000	+	0	0	0.0	0.0
*95.0000	+	0	0	0.0	0.0
*100.000	+	0	0	0.0	0.0
*105.000	+	0	0	0.0	0.0
*110.000	+	0	0	0.0	0.0
*115.000	+	0	0	0.0	0.0
*120.000	+	0	0	0.0	0.0
*125.000	+	0	0	0.0	0.0
*130.000	+	0	0	0.0	0.0
*135.000	+	0	0	0.0	0.0
*140.000	+	0	0	0.0	0.0
*145.000	+	0	0	0.0	0.0
*150.000	+X	1	1	8.3	8.3
*155.000	+XXX	3	4	25.0	33.3
*160.000	+XX	2	6	16.7	50.0
*165.000	+XX	2	8	16.7	66.7
*170.000	+	0	8	0.0	66.7
*175.000	+XXX	3	11	25.0	91.7
*180.000	+	0	11	0.0	91.7
*185.000	+	0	11	0.0	91.7
*190.000	+	0	11	0.0	91.7
*195.000	+X	1	12	8.3	100.0
*200.000	+	0	12	0.0	100.0
*LAST	+	0	12	0.0	100.0
	5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80				

b. 1983 ASPHALT MATERIALS DATA GRADE AC-15

HISTOGRAM OF VARIABLE PEN77

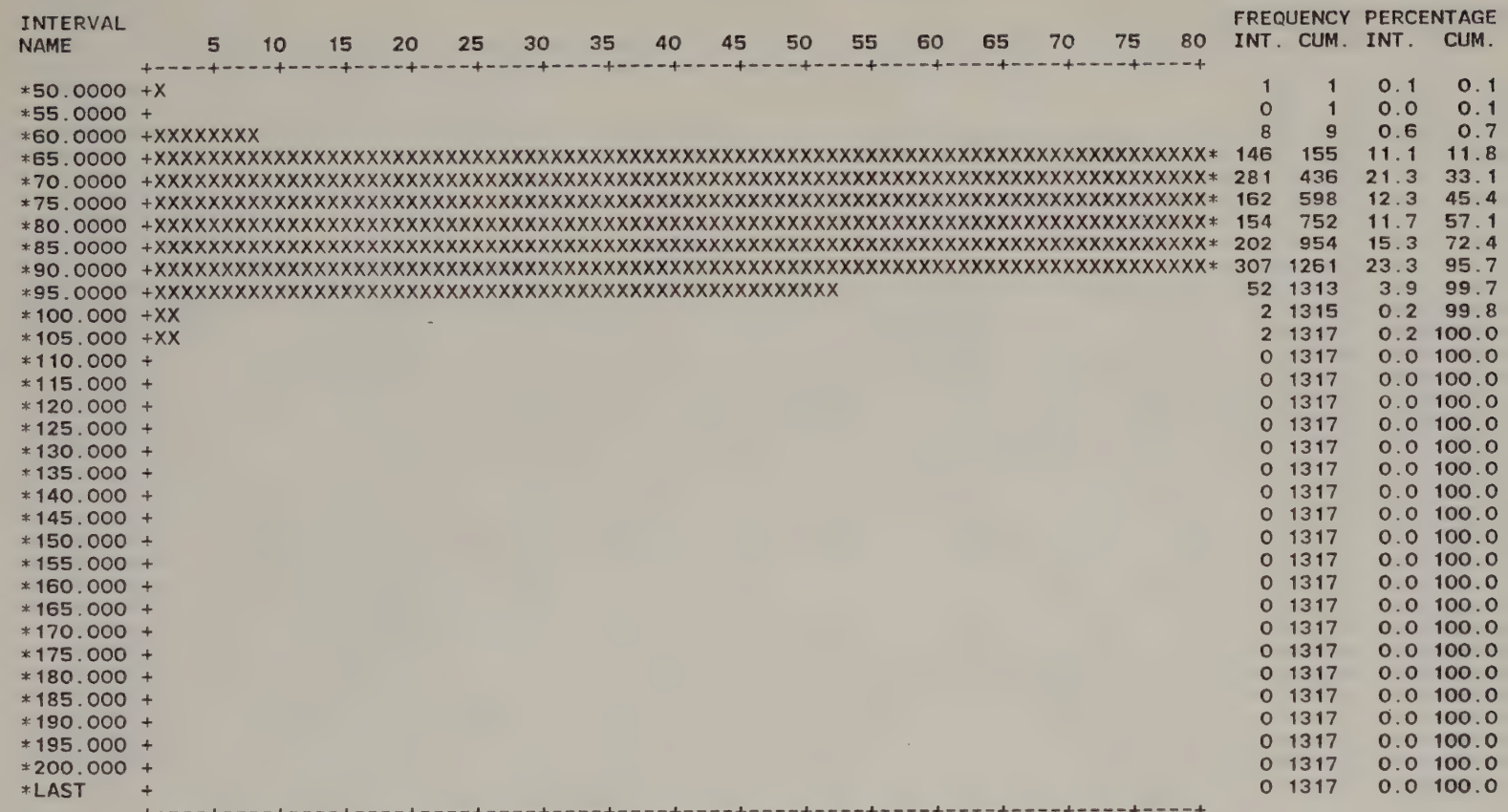
SYMBOL	COUNT	MEAN	ST.DEV.
X	175	84.914	7.036

INTERVAL NAME	5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80	FREQUENCY INT.	FREQUENCY CUM.	PERCENTAGE INT.	PERCENTAGE CUM.
*50.0000	+	0	0	0.0	0.0
*55.0000	+	0	0	0.0	0.0
*60.0000	+X	1	1	0.6	0.6
*65.0000	+XXXX	4	5	2.3	2.9
*70.0000	+XX	2	7	1.1	4.0
*75.0000	+XXXXXXXXXXXX	12	19	6.9	10.9
*80.0000	+XXXXXXXXXXXXXX	14	33	8.0	18.9
*85.0000	+XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	41	74	23.4	42.3
*90.0000	+XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	80	154	45.7	88.0
*95.0000	+XXXXXXXXXXXXXXXXX	18	172	10.3	98.3
*100.000	+XX	2	174	1.1	99.4
*105.000	+	0	174	0.0	99.4
*110.000	+	0	174	0.0	99.4
*115.000	+X	1	175	0.6	100.0
*120.000	+	0	175	0.0	100.0
*125.000	+	0	175	0.0	100.0
*130.000	+	0	175	0.0	100.0
*135.000	+	0	175	0.0	100.0
*140.000	+	0	175	0.0	100.0
*145.000	+	0	175	0.0	100.0
*150.000	+	0	175	0.0	100.0
*155.000	+	0	175	0.0	100.0
*160.000	+	0	175	0.0	100.0
*165.000	+	0	175	0.0	100.0
*170.000	+	0	175	0.0	100.0
*175.000	+	0	175	0.0	100.0
*180.000	+	0	175	0.0	100.0
*185.000	+	0	175	0.0	100.0
*190.000	+	0	175	0.0	100.0
*195.000	+	0	175	0.0	100.0
*200.000	+	0	175	0.0	100.0
*LAST	+	0	175	0.0	100.0

c.1983 ASPHALT MATERIALS DATA GRADE AC-20

HISTOGRAM OF VARIABLE PEN77

SYMBOL	COUNT	MEAN	ST.DEV.
X	1317	77.212	9.599



INTERVAL NAME	FREQUENCY INT.	FREQUENCY CUM.	PERCENTAGE INT.	PERCENTAGE CUM.
*50.0000	1	1	0.1	0.1
*55.0000	0	1	0.0	0.1
*60.0000	8	9	0.6	0.7
*65.0000	146	155	11.1	11.8
*70.0000	281	436	21.3	33.1
*75.0000	162	598	12.3	45.4
*80.0000	154	752	11.7	57.1
*85.0000	202	954	15.3	72.4
*90.0000	307	1261	23.3	95.7
*95.0000	52	1313	3.9	99.7
*100.000	2	1315	0.2	99.8
*105.000	2	1317	0.2	100.0
*110.000	0	1317	0.0	100.0
*115.000	0	1317	0.0	100.0
*120.000	0	1317	0.0	100.0
*125.000	0	1317	0.0	100.0
*130.000	0	1317	0.0	100.0
*135.000	0	1317	0.0	100.0
*140.000	0	1317	0.0	100.0
*145.000	0	1317	0.0	100.0
*150.000	0	1317	0.0	100.0
*155.000	0	1317	0.0	100.0
*160.000	0	1317	0.0	100.0
*165.000	0	1317	0.0	100.0
*170.000	0	1317	0.0	100.0
*175.000	0	1317	0.0	100.0
*180.000	0	1317	0.0	100.0
*185.000	0	1317	0.0	100.0
*190.000	0	1317	0.0	100.0
*195.000	0	1317	0.0	100.0
*200.000	0	1317	0.0	100.0
*LAST	0	1317	0.0	100.0

d.1983 ASPHALT MATERIALS DATA GRADE 85-100

HISTOGRAM OF VARIABLE PEN77

SYMBOL	COUNT	MEAN	ST.DEV.
X	54	90.037	3.608

```
INTERVAL
NAME          5    10    15    20    25    30    35    40    45    50    55    60    65    70    75    80
          +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
*50.0000  +
*55.0000  +
*60.0000  +
*65.0000  +
*70.0000  +
*75.0000  +
*80.0000  +
*85.0000  +XXXXX
*90.0000  +XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
*95.0000  +XXXXXXXXXXXXXXXXX
*100.000  +XXX
*105.000  +
*110.000  +
*115.000  +
*120.000  +
*125.000  +
*130.000  +
*135.000  +
*140.000  +
*145.000  +
*150.000  +
*155.000  +
*160.000  +
*165.000  +
*170.000  +
*175.000  +
*180.000  +
*185.000  +
*190.000  +
*195.000  +
*200.000  +
*LAST     +
          +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
               5    10    15    20    25    30    35    40    45    50    55    60    65    70    75    80
```

INTERVAL NAME	FREQUENCY INT.	FREQUENCY CUM.	PERCENTAGE INT.	PERCENTAGE CUM.
*50.0000	0	0	0.0	0.0
*55.0000	0	0	0.0	0.0
*60.0000	0	0	0.0	0.0
*65.0000	0	0	0.0	0.0
*70.0000	0	0	0.0	0.0
*75.0000	0	0	0.0	0.0
*80.0000	0	0	0.0	0.0
*85.0000	5	5	9.3	9.3
*90.0000	29	34	53.7	63.0
*95.0000	17	51	31.5	94.4
*100.000	3	54	5.6	100.0
*105.000	0	54	0.0	100.0
*110.000	0	54	0.0	100.0
*115.000	0	54	0.0	100.0
*120.000	0	54	0.0	100.0
*125.000	0	54	0.0	100.0
*130.000	0	54	0.0	100.0
*135.000	0	54	0.0	100.0
*140.000	0	54	0.0	100.0
*145.000	0	54	0.0	100.0
*150.000	0	54	0.0	100.0
*155.000	0	54	0.0	100.0
*160.000	0	54	0.0	100.0
*165.000	0	54	0.0	100.0
*170.000	0	54	0.0	100.0
*175.000	0	54	0.0	100.0
*180.000	0	54	0.0	100.0
*185.000	0	54	0.0	100.0
*190.000	0	54	0.0	100.0
*195.000	0	54	0.0	100.0
*200.000	0	54	0.0	100.0
*LAST	0	54	0.0	100.0

MEAN VISCOSITY, PENETRATION BY PRIMESOURCE

1983 ASPHALT CEMENT DATA

a. AC-5

b. AC-15

c. AC-20

d. 85-100

a. 1983 ASPHALT MATERIALS DATA GRADE AC-5

VARIABLE NO.	NAME	GROUPING VARIABLE	LEVEL	TOTAL FREQUENCY	MEAN	STANDARD DEVIATION	ST.ERR OF MEAN	COEFF. OF VARIATION	SMALLEST VALUE	SMALLEST Z-SCORE	LARGEST VALUE	LARGEST Z-SCORE	RANGE
5	AVIS140			12	536.667	33.115	9.5595	0.06171	452.000	-2.56	573.000	1.10	121.000
		PSOURCE	ARCO-3R	0									
			ARCO-PH	0									
			CHEV-LYN	0									
			CHEV-PMB	0									
			CHEV-TRY	0									
			EXXN-LIN	0									
			MAR-TON	3	514.000	53.694	31.0000	0.10446	452.000	-1.15	545.000	0.58	93.000
			PKHM-ATH	0									
			UNTED-WR	0									
			WBNK-PEN	0									
			WBNK-PMB	0									
			CIBRO-AL	0									
			CIBRO-3R	0									
			SHELL-MO	0									
			GULF-MON	0									
			PTFN-MON	0									
			BP-MONT	0									
			BP-OAK	9	544.222	23.026	7.6753	0.04231	504.000	-1.75	573.000	1.25	69.000
			PARCO-ST	0									
			ASPAS-KY	0									
			MON-PFRD	0									
6	PEN77			12	164.000	12.813	3.6989	0.07813	150.000	-1.09	195.000	2.42	45.000
		PSOURCE	ARCO-3R	0									
			ARCO-PH	0									
			CHEV-LYN	0									
			CHEV-PMB	0									
			CHEV-TRY	0									
			EXXN-LIN	0									
			MAR-TON	3	180.667	12.423	7.1725	0.06876	173.000	-0.62	195.000	1.15	22.000
			PKHM-ATH	0									
			UNTED-WR	0									
			WBNK-PEN	0									
			WBNK-PMB	0									
			CIBRO-AL	0									
			CIBRO-3R	0									
			SHELL-MO	0									
			GULF-MON	0									
			PTFN-MON	0									
			BP-MONT	0									
			BP-OAK	9	158.444	6.948	2.3161	0.04385	150.000	-1.22	173.000	2.09	23.000
			PARCO-ST	0									
			ASPAS-KY	0									
			MON-PFRD	0									

b. 1983 ASPHALT MATERIALS DATA GRADE AC-15

VARIABLE NO.	NAME	GROUPING VARIABLE	LEVEL	TOTAL FREQUENCY	MEAN	STANDARD DEVIATION	ST.ERR OF MEAN	COEFF. OF VARIATION	SMALLEST VALUE	SMALLEST Z-SCORE	LARGEST VALUE	LARGEST Z-SCORE	RANGE
5	AVIS140			175	1384.966	117.807	8.9054	0.08506	1042.000	-2.91	1834.000	3.81	792.000
		PSOURCE	ARCO-3R	0									
			ARCO-PH	0									
			CHEV-LYN	0									
			CHEV-PMB	0									
			CHEV-TRY	0									
			EXXN-LIN	0									
			MAR-TON	104	1415.221	101.451	9.9481	0.07169	1042.000	-3.68	1834.000	4.13	792.000
			PKHM-ATH	0									
			UNTED-WR	25	1426.560	145.910	29.1820	0.10228	1224.000	-1.39	1765.000	2.32	541.000
			WBNK-PEN	0									
			WBNK-PMB	0									
			CIBRO-AL	0									
			CIBRO-3R	0									
			SHELL-MO	0									
			GULF-MON	0									
			PTFN-MON	4	1373.750	120.162	60.0810	0.08747	1262.000	-0.93	1532.000	1.32	270.000
			BP-MONT	0									
			BP-OAK	42	1286.357	78.575	12.1243	0.06108	1102.000	-2.35	1522.000	3.00	420.000
			PARCO-ST	0									
			ASPAS-KY	0									
			MON-PFRD	0									
6	PEN77			175	84.914	7.036	0.5319	0.08286	59.000	-3.68	114.000	4.13	55.000
		PSOURCE	ARCO-3R	0									
			ARCO-PH	0									
			CHEV-LYN	0									
			CHEV-PMB	0									
			CHEV-TRY	0									
			EXXN-LIN	0									
			MAR-TON	104	86.817	5.238	0.5136	0.06033	66.000	-3.97	114.000	5.19	48.000
			PKHM-ATH	0									
			UNTED-WR	25	73.760	7.055	1.4110	0.09565	59.000	-2.09	85.000	1.59	26.000
			WBNK-PEN	0									
			WBNK-PMB	0									
			CIBRO-AL	0									
			CIBRO-3R	0									
			SHELL-MO	0									
			GULF-MON	0									
			PTFN-MON	4	83.000	2.944	1.4720	0.03547	80.000	-1.02	87.000	1.36	7.000
			BP-MONT	0									
			BP-OAK	42	87.024	4.630	0.7145	0.05321	72.000	-3.24	99.000	2.59	27.000
			PARCO-ST	0									
			ASPAS-KY	0									
			MON-PFRD	0									

c. 1983 ASPHALT MATERIALS DATA GRADE AC-20

VARIABLE NO.	NAME	GROUPING VARIABLE	LEVEL	TOTAL FREQUENCY	MEAN	STANDARD DEVIATION	ST.ERR OF MEAN	COEFF. OF VARIATION	SMALLEST VALUE	SMALLEST Z-SCORE	LARGEST VALUE	LARGEST Z-SCORE	RANGE
5	AVIS140			1317	1967.978	216.089	5.9544	0.10980	1384.000	-2.70	2998.000	4.77	1614.000
		PSOURCE	ARCO-3R	187	1865.064	149.598	10.9397	0.08021	1511.000	-2.37	2576.000	4.75	1065.000
			ARCO-PH	12	2097.917	82.875	23.9240	0.03950	1994.000	-1.25	2229.000	1.58	235.000
			CHEV-LYN	106	1835.472	145.539	14.1360	0.07929	1576.000	-1.78	2583.000	5.14	1007.000
			CHEV-PMB	99	1842.980	144.550	14.5278	0.07843	1556.000	-1.99	2564.000	4.99	1008.000
			CHEV-TRY	67	1906.164	146.606	17.9108	0.07691	1668.000	-1.62	2308.000	2.74	640.000
			EXXN-LIN	84	1927.369	132.799	14.4896	0.06890	1414.000	-3.87	2343.000	3.13	929.000
			MAR-TON	21	1655.238	102.514	22.3705	0.06193	1384.000	-2.65	1783.000	1.25	399.000
			PKHM-ATH	146	1928.096	124.436	10.2984	0.06454	1715.000	-1.71	2304.000	3.02	589.000
			UNTED-WR	0									
			WBNK-PEN	1	2257.000	0.000	0.0000	0.00000	2257.000	0.00	2257.000	0.00	0.000
			WBNK-PMB	62	2065.677	179.627	22.8126	0.08696	1682.000	-2.14	2397.000	1.84	715.000
			CIBRO-AL	250	2230.684	140.038	8.8568	0.06278	1773.000	-3.27	2806.000	4.11	1033.000
			CIBRO-3R	82	2194.378	161.533	17.8384	0.07361	1806.000	-2.40	2604.000	2.54	798.000
			SHELL-MO	14	1713.500	86.962	23.2416	0.05075	1565.000	-1.71	1848.000	1.55	283.000
			GULF-MON	0									
			PTFN-MON	0									
			BP-MONT	0									
			BP-OAK	0									
			PARCO-ST	164	1834.768	145.933	11.3955	0.07954	1565.000	-1.85	2998.000	7.97	1433.000
			ASPAS-KY	10	1953.900	206.109	65.1774	0.10549	1674.000	-1.36	2250.000	1.44	576.000
			MON-PFRD	12	1885.583	186.275	53.7729	0.09879	1749.000	-0.73	2286.000	2.15	537.000
6	PEN77			1317	77.212	9.599	0.2645	0.12432	0.000	-8.04	101.000	2.48	101.000
		PSOURCE	ARCO-3R	187	68.733	4.656	0.3405	0.06774	60.000	-1.88	90.000	4.57	30.000
			ARCO-PH	12	67.083	2.610	0.7534	0.03890	65.000	-0.80	72.000	1.88	7.000
			CHEV-LYN	106	83.000	5.880	0.5711	0.07084	65.000	-3.06	92.000	1.53	27.000
			CHEV-PMB	99	81.758	5.662	0.5691	0.06926	62.000	-3.49	92.000	1.81	30.000
			CHEV-TRY	67	84.970	4.690	0.5730	0.05520	70.000	-3.19	95.000	2.14	25.000
			EXXN-LIN	84	65.881	4.559	0.4974	0.06919	58.000	-1.73	91.000	5.51	33.000
			MAR-TON	21	78.429	4.319	0.9426	0.05507	72.000	-1.49	88.000	2.22	16.000
			PKHM-ATH	146	71.479	4.759	0.3939	0.06658	63.000	-1.78	90.000	3.89	27.000
			UNTED-WR	0									
			WBNK-PEN	1	86.000	0.000	0.0000	0.00000	86.000	0.00	86.000	0.00	0.000
			WBNK-PMB	62	81.355	5.214	0.6622	0.06409	65.000	-3.14	91.000	1.85	26.000
			CIBRO-AL	250	86.672	6.974	0.4411	0.08047	0.000	-12.43	101.000	2.05	101.000
			CIBRO-3R	82	85.573	4.922	0.5435	0.05751	69.000	-3.37	93.000	1.51	24.000
			SHELL-MO	14	69.500	3.032	0.8103	0.04362	64.000	-1.81	78.000	2.80	14.000
			GULF-MON	0									
			PTFN-MON	0									
			BP-MONT	0									
			BP-OAK	0									
			PARCO-ST	164	68.476	4.821	0.3765	0.07041	56.000	-2.59	85.000	3.43	29.000
			ASPAS-KY	10	76.100	2.685	0.8492	0.03529	72.000	-1.53	81.000	1.82	9.000
			MON-PFRD	12	87.417	2.234	0.6450	0.02556	85.000	-1.08	92.000	2.05	7.000

d. 1983 ASPHALT MATERIALS DATA GRADE 85-100

VARIABLE NO.	NAME	GROUPING VARIABLE	LEVEL	TOTAL FREQUENCY	MEAN	STANDARD DEVIATION	ST.ERR OF MEAN	COEFF. OF VARIATION	SMALLEST VALUE	SMALLEST Z-SCORE	LARGEST VALUE	LARGEST Z-SCORE	RANGE
4	KVIS275			54	330.278	18.727	2.5484	0.05670	297.000	-1.78	373.000	2.28	76.000
		PSOURCE	ARCO-3R	0									
			ARCO-PH	0									
			CHEV-LYN	0									
			CHEV-PMB	0									
			CHEV-TRY	0									
			EXXN-LIN	0									
			MAR-TON	0									
			PKHM-ATH	0									
			UNTED-WR	0									
			WBNK-PEN	0									
			WBNK-PMB	0									
			CIBRO-AL	0									
			CIBRO-3R	0									
			SHELL-MO	0									
			GULF-MON	14	351.071	16.717	4.4678	0.04762	318.000	-1.98	373.000	1.31	55.000
			PTFN-MON	33	324.030	11.577	2.0153	0.03573	308.000	-1.38	366.000	3.63	58.000
			BP-MONT	7	318.143	19.548	7.3886	0.06145	297.000	-1.08	351.000	1.68	54.000
			BP-OAK	0									
			PARCO-ST	0									
			ASPAS-KY	0									
			MON-PFRD	0									
5	PEN77			54	90.037	3.608	0.4910	0.04007	85.000	-1.40	100.000	2.76	15.000
		PSOURCE	ARCO-3R	0									
			ARCO-PH	0									
			CHEV-LYN	0									
			CHEV-PMB	0									
			CHEV-TRY	0									
			EXXN-LIN	0									
			MAR-TON	0									
			PKHM-ATH	0									
			UNTED-WR	0									
			WBNK-PEN	0									
			WBNK-PMB	0									
			CIBRO-AL	0									
			CIBRO-3R	0									
			SHELL-MO	0									
			GULF-MON	14	91.143	3.110	0.8311	0.03412	86.000	-1.65	95.000	0.00	9.000
			PTFN-MON	33	89.273	2.971	0.5173	0.03329	85.000	-1.44	98.000	2.94	13.000
			BP-MONT	7	91.429	6.214	2.3488	0.06797	85.000	-1.03	100.000	1.38	15.000
			BP-OAK	0									
			PARCO-ST	0									
			ASPAS-KY	0									
			MON-PFRD	0									

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